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ABSTRACT

Research has suggested that the incidence of loneliness peaks at adolescence and decreases with age. Changes in the determinants of loneliness during adolescence were investigated for grade 8, grade 11, and university students. Subjects (N=410) completed a written questionnaire which included ten items from the UCLA Loneliness Scale, the Self-Esteem Scale, a self-consciousness sub-scale, and items from the Ego Identity Scale. Subjects also reported on their number of friends and frequency of contact, and completed an adapted version of the Friendship Scale. Other questions measured each subject's relationship with family and parents, examined personal and social factors associated with loneliness, and recorded demographic and situational factors. Results indicated no significant differences in the amount of loneliness among the three age groups. Some determinants (self-esteem, social anxiety, level of identity achievement, quality of the family relationship, satisfaction with friendship relations) were strong predictors of loneliness for all groups, while others changed with age. For the youngest group, the quality of the relationship with the mother was a particularly strong predictor. For older adolescents the frequency of contact with friends and satisfaction with dating relationships were more important predictors of loneliness. The findings tend to provide some support for the definition of loneliness as a social deficiency. (Author/NRB)

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ADOLESCENT LONELINESS

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ADOLESCENT LONELINESS

Loneliness is a universal experience; a part of the human condition. Loneliness has been a subject of concern to poets, philosophers and writers through the ages. It has been a frequent theme of popular music and literature. However, only recently has loneliness become a subject of investigation by psychiatrists, psychologists and sociologists (eg. Gordon, 1976, Weiss, 1973).

Lack of Definition and Measurement

The study of loneliness has been hindered by the lack of a precise definition of the term. Gordon (1976) points out that there has been a confusion in the use of the terms--loneliness and depression, alienation and isolation. Loneliness has frequently been confused with aloneness or solitude. Most definitions of loneliness include such descriptive phrases as "unhappiness at being alone", "feeling of emptiness and desolation" and "feeling the deprivation of expected human relationship."

Recent work has contributed towards the formulation of an operational definition of loneliness (Jong-Gierveld, 1978; Peplau and Perlman, 1979). According to Peplau and Perlman, loneliness can be conceptualized as a social deficit, in which loneliness is reflected by the discrepancy between desired and achieved levels of social interaction.

The development of a valid instrument for the measurement of loneliness has also contributed to empirical investigation (Wood and Hannell, 1977; Russell, Peplau and Cutrona, 1980).

The notion of loneliness as a response to a relational deficit has been examined by Weiss (1973), who makes a useful distinction between the loneliness of emotional isolation, which results from the loss or lack of an intimate

relationship, and the loneliness of social isolation which results from the lack of satisfactory involvement with a network of peers, family and community.

Loneliness and the Adolescent Period

Several social scientists have speculated on loneliness and the adolescent period. Sullivan's and Weiss' observations have received considerable attention. Sullivan (1953) discusses the continuing need for intimate contact with others during the course of development. During childhood, adult participation and later, peer contact, are important needs. During pre-adolescence and adolescence, there is an increasing need for an intimate relationship with a friend or loved one, with adolescence characterized by a growing interest in a relationship with a member of the opposite sex. Loneliness results when the need for interpersonal intimacy is not satisfied. Sullivan considered pre-adolescence, and especially adolescence as the period when increased loneliness could develop, because of the profound need for intimacy. In Sullivan's view, the experience of loneliness at this critical time may set the pattern for future social interaction and for loneliness in adulthood.

According to Weiss (1973) the conscious experience of loneliness becomes possible only in adolescence. He sees the loneliness of emotional isolation as related to the relinquishment of parents as attachment figures. Both Sullivan and Weiss would seem to agree that the experience of loneliness in adolescence is associated with the need for new attachment figures.

It is at this critical period of transition, when parents may no longer serve as attachment figures and when the adolescent may not yet have an alternative attachment figure, that the experience of loneliness emerges. While peer group attachments become more important, they may not provide the

emotional support required at this time. Dissatisfaction with existing social interaction produces feelings of loneliness (Peplau and Perlman, 1979).

Empirical Studies

Until recently, very little attention has been given to the empirical investigation of loneliness in adolescence. However, evidence from recent studies (Rubinstein, Shaver and Peplau, 1979) indicates that young people are more lonely than old people. More High school seniors and college students report feeling lonely. These results suggest that the incidence of loneliness peaks at adolescence and decreases with age.

Incidence of Adolescent Loneliness. Brennan and Auslander (1979) analyzed data from four separate studies using a sample of 9,000 adolescents from 10 U.S. cities. They found that 10-20% of adolescents experience serious levels of loneliness and that over 50% of adolescents experience recurrent feelings of loneliness. Serious levels of loneliness were associated with failure, rejection, apathy, low self-esteem, disinterest in school, and feelings of isolation, normlessness and powerlessness. These findings indicate that loneliness is a major social problem.

However, while this study provides evidence of many personal and social factors associated with loneliness, it was based on other research, not specifically designed for measuring or examining loneliness as such. Brennan and Auslander acknowledge the limitations presented by the lack of a consistent single data base.

In another large scale study, Ostrov and Offer (1978) examined the extent of self-reported loneliness among 2939 adolescents in three countries (midwest United States, Australia and Ireland). Loneliness was measured by

one item on a personality test (The Offer Self-Image Questionnaire). They found that the proportions of younger adolescents (ages 12-15) reporting feelings of loneliness was greater than the proportion of older adolescents (ages 16-20). Disturbed adolescents, (ages 12-20, male and female) were more lonely than normal adolescents, and young American boys were more lonely than Irish and Australian boys.

Ostrow and Offer conclude that the normal adolescent experiences intense loneliness only infrequently and that loneliness decreases with age, while for the disturbed child adolescence presents increased pressures that may lead to isolation. They also suggest that the mobility and competitiveness of American society may contribute to greater loneliness.

A major weakness of this particular study is the use of a single item to measure loneliness.

Antecedents of Loneliness

Several recent studies have used a multi dimensional approach in investigating the antecedents of loneliness. Some of these dimensions include: personal predispositions, social/developmental processes, developmental changes and situational factors.

Personal Predispositions. Brennan and Auslander (1979) report evidence of the importance of personal predispositions associated with loneliness. They conclude that personal characteristics such as shyness, low self esteem, physical unattractiveness, and lack of adequate social skills may predispose the adolescent towards the experience of social isolation and subsequent loneliness. They found that lonely adolescents had unsatisfactory interpersonal relationships with peers, parents and teachers.

Other studies have reported the association between low self esteem and loneliness (Rosenberg, 1965). Wood and Hannell (1977) found that loneliness was inversely related to self-esteem, self-actualization and feelings of being able to communicate with friends.

Social-developmental processes. In a social-developmental analysis of loneliness, Ellison (1978) emphasizes the three basic needs for attachment, acceptance and acquisition of adequate social skills, which must be satisfied in order to avoid loneliness. In childhood, these needs must be satisfied by the presence and participation of the parents or caretakers. Later, particularly in adolescence, the needs for attachment and acceptance are transferred to the peer group. If adequate social skills have not developed (because of unsatisfactory social interactions in childhood), the adolescent has difficulty forming and maintaining peer relationships.

Bowlby (1969) has described how the disruption of affectional bonds during infancy and childhood may result in the inability to form satisfying affectional bonds later in life. The inability to trust inhibits the development of intimacy, and may result in damage to self-esteem and chronic feelings of loneliness (Rosenberg, 1965, Brennan and Auslander, 1979).

Developmental Changes. Brennan (in press) outlines how the developmental changes of puberty contribute to the emergence of loneliness at adolescence. In addition to introducing new desires and expectations, these processes may cause disruptions in existing relationships. Such disruptions may precipitate the onset of loneliness (Peplau and Perlman, 1979).

Adolescence is the period of separation from parents as primary attachment figures, and the period of increased need for establishing relationships

with others, of the same or opposite sex (Sullivan, 1953, Weiss, 1973). There may be times during this search when the adolescent finds himself/herself psychologically alone and experiences intense loneliness.

Adolescents are faced with making important social and personal adjustments during the period of transition from the dependence of childhood to the independence of young adulthood. Related to the struggle for independence, is the process of identity development during adolescence. Successful resolution of the crisis between Ego Identity and Identity Diffusion involves the re-organization of the adolescent's psycho-social characteristics into a new self (Erikson, 1968).

The problems encountered by the adolescent in his search for identity and meaning in a changing social context, require the increased support of peer group affiliations. As ties with parents are weakened, the importance of the peer group increases.

Cognitive development may bring increased expectations for the quality of relationships. Dissatisfaction with existing relationships could produce isolation or loneliness. In addition, romantic expectations of the adolescent, fostered by cultural emphasis on social success, may result in feelings of inadequacy or failure, when expectations are not met. Comparison with peers in terms of social performance may determine the degree of loneliness experienced.

Situational Factors. Among the situational factors implicated in the development of loneliness are mobility and disruptions in the family structure. Individuals whose parents had been divorced, showed an increased vulnerability to subsequent loneliness (Rubinstein, Shaver and Peplau, 1979; Shaver and Rubinstein, 1979). These researchers found that the younger the individual at the time of the parents' divorce, the greater the loneliness, and the lower the

self-esteem at the time of their survey. The perceived quality of parent-child relationship was also related to later loneliness.

Hypotheses

The present study will measure adolescent loneliness and investigate the antecedents of loneliness. A question of particular interest is whether the determinants of loneliness change over adolescence. On the basis of the literature and some empirical studies, several hypotheses have been formulated.

1) Loneliness has been associated with low self-esteem (Rosenberg, 1965; Wood and Hannell, 1977; Brennan and Auslander, 1979, Shaver and Rubinstein, 1979). This study will attempt to replicate these findings among adolescents, with the hypothesis that high levels of loneliness will be correlated with low self-esteem.

2) Fenigstein, Scheier and Buss (1975) and Fenigstein (1979) found that individuals who were high in public self consciousness, were more aware of how they are seen by others, and more sensitive to rejection. Our hypothesis is that self-consciousness may be related to loneliness, so that subjects who are more self-conscious, will also be more lonely.

3) Recent reaearch has suggested that loneliness may be related to the level of Identity achievement. Brennan and Auslander (1979) found that a strong sense of identity (and/or self-esteem) correlates with general non-loneliness ($r = .38$). Other researchers have suggested that adolescents who have not yet made ideological or occupational commitments, might experience a sense of alienation or isolation (Marcia; 1966, Pomerantz, 1979). Our hypothesis is that loneliness will be associated with Identity diffusion.

4) The quality of perceived parent-child relationships has been

associated with loneliness (Brennan and Auslander, 1979; Shaver and Rubinstein, 1979). There is also some evidence for age trends associated with the importance of parent-child relationships and the experience of loneliness (Brennan and Auslander 1979). Younger adolescents are still more emotionally committed to family relationships than are older adolescents (Douvan and Adelson, 1966). We would predict that loneliness will be associated with weak family or parental relationships, especially for younger adolescents.

5) Based on the Shaver and Rubinstein (1979) evidence, we would predict that adolescents whose parents were divorced or separated will be more lonely, and that the age of the individual at the time of the parents' divorce will be inversely related to loneliness.

6) Other social disruptions or situational factors such as moving, or changing schools will be related to more loneliness. Such factors may precipitate loneliness because of the loss of social contacts and the need to form new relationships.

7) Several studies have examined the different expectations and needs for friendship at different ages (Douvan and Adelson, 1966; La Gaipa, 1979; Dickens and Perlman, 1980). We would predict that expectations for certain qualities and behavior in relationships with friends may be related to loneliness. The experience of a discrepancy between expectation for, and actual experience of friendship would be associated with greater loneliness. This is in line with the theory of loneliness as a discrepancy between desired and achieved levels of social contact (Peplau and Perlman, 1979). Loneliness may be associated with age differences in expectations, with older adolescents expecting more from friendships, and therefore being more lonely.

8) A final prediction involves possible differences in the interpersonal deficits associated with loneliness. Adolescence is the period when parental attachments are replaced by the increasing importance of peer group affiliations, and the growing need for intimate relationships with others. It might be expected that younger adolescents will be lonely in relation to dissatisfaction with parental relationships, whereas older adolescents will be more lonely with respect to their peer and/or heterosexual romantic relationships.

Method

Subjects

A total of 410 students from Winnipeg Junior and Senior High Schools, and the University of Manitoba, participated in this project. There were 136 subjects in Grade 8, 84 subjects in Grade 11 and 190 subjects at the University level. Table 1 presents details of the numbers of males and females within each group.

The Junior High and High School samples were drawn from two different schools in predominantly middle class neighborhoods. Letters were given to the students in advance, informing them of the project. Students who did not wish to participate were given the opportunity to opt out. To the best of our knowledge, few, if any students did so.

Subjects completed the questionnaire during regular class time. Essentially, all students available at the day and time of testing, were involved. Where options existed, in terms of class groups, we suggested that questionnaires be administered in college preparatory courses, rather than in industrial arts type courses.

The University students were volunteers from Introductory psychology

TABLE 1

NUMBER OF STUDENTS BY GRADE LEVEL AND GENDER

Sample Level	Males	Females
Grade 8	60	67
Grade 11	31	49
University	81	103

Note: 391 cases are presented here. 19 cases are listed as missing data, because information on either the subject's gender or grade level, was missing.

classes who were fulfilling course requirements for research participation. These subjects earned one credit for completing the questionnaire.

Procedure

The 133 item written questionnaire required approximately one hour to complete. In the Junior High and High Schools, the questionnaire was administered by the classroom teachers, with the assistance of a guidance counsellor. At the University level, the questionnaire was administered by the experimenter.

Subjects were given basic instructions about the format of the questionnaire before proceeding. There were two parts to the questionnaire; the first part could be answered directly on the written form, but the second part required that responses be recorded on a separate IBM answer sheet. A four digit identity code number had been marked on the first part of each questionnaire. Subjects were instructed to copy this code number onto their IBM answer sheets. This was the only form of identification used, in order to ensure complete confidentiality of the data.

Upon completion of the questionnaire, University subjects were each given a letter explaining the purpose of the survey. Subjects who were interested in the results of this study, filled out self-addressed envelopes so that information could be mailed to them later.

Feedback for the Junior High and High Schools consisted of a letter sent to the school principals, explaining the results of the study. The experimenters suggested meeting with all interested students, teachers and parents to discuss these results.

Measures

The UCLA Loneliness Scale. The major loneliness measure consisted of 10 items selected from the 20 item Revised UCLA Loneliness scale (Russell, Peplau and Cutrona, 1980). (See Appendix Part B, items 36-45). This scale has been found to have high internal consistency with a coefficient alpha of .94. It has been found to have concurrent validity with measures of emotional states related to loneliness. Concurrent validity was also indicated by the high correlation of scores on this scale with other measures of loneliness (Russell et al., 1980).

The items selected for the questionnaire included a four item survey version recommended by Russell et al., plus six other randomly selected items. (Half the items selected were expressed in pro-trait terms, half in con-trait terms). The four items in the short scale were found to have a coefficient alpha of .75. Items included such statements as: "I feel in tune with the people around me", and "There is no one I can turn to".

Subjects were instructed to indicate how often a statement described them, by marking one of four possible responses: "Never", "Rarely", "Sometimes" or "Often". A high score on this scale indicates greater loneliness.

The Self-esteem measure. A sub-section (See Appendix, Part B, items 75-84) of the questionnaire measured self-esteem, using the Self-Esteem Scale (Rosenberg, 1965). This scale consists of five positive and five negative statements, presented randomly. These items include such statements as: "I feel that I have a number of good qualities" and "At times I think I am no good at all". Subjects were instructed to indicate their response for each statement on a four point scale (strongly agree, agree, disagree and strongly disagree).

This scale has been found to have high reliability (Rosenberg, 1965). Scores were determined by the number of positive or negative statements with which the subject agreed. Subjects indicating more agreement with positive statements were considered high in self-esteem.

The self-consciousness measure. Self-consciousness was measured by a twelve item sub-scale (See Appendix Part B, items 85-96), selected with reference to factor analysis data from a 23 item scale developed by Fenigstein, Scheier and Buss (1975). This scale measures private and public self-consciousness and social anxiety. Four items from each of these three categories were used.

Private self-consciousness terms included: "I'm always trying to figure myself out". Public self-consciousness items included "I'm concerned about what other people think of me". Social Anxiety items included "I get embarrassed very easily".

The six positive and six negative statements, as well as the categories, were presented randomly, to avoid response set.

Fenigstein et al. (1975) found the scale reliable with test, re-test correlations for the sub scales of: public self-consciousness: .84, private self-consciousness .79, and social anxiety .73, with a correlation of .80 for the total scale.

Ego Identity Measure. Ego Identity Achievement was measured by selected items from the Ego Identity Scale developed by Rasmusen (1964) (See Appendix, Part B, items 97-108). This scale was based on derivatives of Erikson's six crisis stages--trust vs mistrust, autonomy vs shame, initiative vs guilt, industry vs inferiority, identity vs identity diffusion, and intimacy vs isolation. On the original 72 item scale each of the derivatives is represented by three statements, with two positive and two negative items for each of the

18 statements. Subjects were required to indicate whether they agreed or disagreed with each statement.

This questionnaire used only those items related to the fifth crisis stage (i.e. Identity vs Identity Diffusion in Adolescence).

According to Rasmussen (1964), the three derivatives relevant to this stage are: I) Sense of psycho-social well being, being at home in one's body; II) Recognition of the conception of one's self and the response or recognition of the community to one; III) The individual has a sense or feeling of knowing what his plans and goals are, and where he is headed in the forseeable future.

The questionnaire included 12 items relevant to the Fifth crisis stage, with each of the three derivates being represented by four items. Sample items of each derivative are: "I do no feel that my looks and actions keep me from getting ahead in life" (Derivative I), "No one seems to understand me" (Derivative II), "I feel pretty sure that I know what I want to do in the future and I have some definite goals" (Derivative III).

Subjects responded on a four-point Scale ranging from "Strongly agree", "agree", "disagree" and "strongly disagree". Agreeement with positive statements indicated Identity Achievement, while agreement with negative statements indicated Identity diffusion.

The split half reliability of this scale was .85 (Rasmussen, 1964), and test-retest reliability for the total score was .87 (Pomerantz, 1979).

Number of friends and frequency of contact. Subjects were requested to list their good friends by initial, indicating also, the frequency of contact with these friends and whether they were relatives. Several measures were developed from this information. The number of friends was computed

both for the total number listed, and also for the number of friends, excluding relatives. A total frequency of contact measure was derived from the total frequency of contact with all listed persons, adjusting for the number of non-listed persons. The adjustment was made as follows. Students could list up to 20 friends, and could report frequent (=1) or infrequent (=5) contact. For non-listed friends, a frequency of contact value of 6 was assigned, and then the total frequency of contact score was summed over all 20 possible friends. Scores could range from 20 (high contact) to 120 (no contact).

An average frequency of contact score was also computed. This was an average for the number of friends actually listed, with the non-listed friends ignored.

Friendship Scale. The perceived quality of relationships with good friends was measured by an adapted version of the Friendship Scale (See Appendix Part A, items 2-11), developed by La Gaipa (1977). The scale used in this questionnaire consisted of 10 items, examining five friendship dimensions, with two items representing each dimension. The five friendship dimensions are: Positive Regard, Self-disclosure, Authenticity, Helping and Support, and Empathic Understanding. Each of the 10 items involved two rating scales, one measuring the subjects' expectation of experiencing the particular quality described, and one measuring the frequency of actually achieving that quality in friendship relations. An item measuring Positive Regard was "They show appreciation and praise me when I deserve it". An item measuring Self disclosure included: "I feel free to express my most inner private feelings to them". One item for Authenticity was: "We can express differences of opinion without it's coming between us". A Helping and support item was: "They are concerned with my welfare and help to promote it". An item for Empathic understanding

included: "They really try to see things through my eyes".

Relationship with Family and Parents. The questionnaire investigated the subjects' relationship with their family in general, and with their parents in particular. Four items adapted from the Shaver and Rubinstein loneliness Questionnaire (1979) were used to assess the quality of the relationship with the mother and the father. Subjects were asked to indicate how certain statements described their relationship with their mother (or father), responding on a five-point scale ranging from, "warm, loving relationship" to "I didn't live with my mother (or father)." Another item asked "How much could you rely on your mother (or father) for help when you had any kind of problem". The five-point response scale ranged from "very much" to "not at all".

Relationship with family was measured by five items, including, "I have a good relationship with most members of my immediate family" and "I have very little to say to members of my family". Subjects marked one of four possible responses (strongly agree, agree, disagree). These items were selected with reference to factor loading (Schmidt, 1976).

Personal and Social Factors. Several categories of interest were addressed in order to examine the personal and social factors associated with loneliness. One category of questions examined the number of social interactions and the frequency of participation in social, cultural, athletic, religious and school activities. Another category of questions considered subjects dating status, including frequency, importance and satisfaction with dating or romantic relationships.

Some questions addressed the matter of changes in the number of friends and possible reasons for the change. Subjects were also asked to assess the

number of good friends they had in comparison with their peers.

Among the other social factors considered were the types of contacts subjects had (whether with friends or strangers) and the amount of time spent alone.

Another category of questions measured the subjects' satisfaction with the quality of their relationships with their good friends and with their family.

Demographic and Situational Factors. The questionnaire included general demographic questions, as well as several questions related to situational factors such as mobility and social disruptions. Three questions addressed the matter of parental divorce or separation. Subjects were asked to indicate their age when this event may have occurred, and also indicate if, and how long, they had, for any reason, lived in a single parent household.

Results

Two main types of statistical analyses were performed to analyze the data. A 3 x 2 (school level by gender) analysis of variance was computed for a number of dependent variables of interest. Correlations between the UCLA Revised Loneliness Scale and various other measures, were calculated. These correlations were obtained for the sample as a whole, as well as for the three separate levels (Grade 8, Grade 11 and University).

In addition to these two main statistical techniques, two other tests were employed. A z-test was used to detect differences between the age groups, in the correlations. Where variables differed significantly in their relationship to loneliness, among the three age groups, the separate correlations are reported. Otherwise, only the correlation for the sample as a whole, will be reported.

Where significant results were obtained by analysis of variance, the Scheffé test was then used (with alpha set at .05) to make comparisons of means. This was used, even though it is a conservative test of pairwise comparisons, because it is suitable for unequal sized groups. Significant differences, based on this procedure, will also be reported.

Results will typically be presented in terms of both analysis of variance and correlations. In some cases, where an analysis of variance was not computed, only correlations will be reported. The developmental trends in the dependent variables and the correlates of loneliness will be scrutinized according to the hypotheses outlined earlier. First, however, an examination of the use of the UCLA scale with Grade 8 subjects, is in order.

The UCLA Loneliness Measure

The results from this study support the validity of the UCLA Revised Loneliness Scale. Until now, the scale has been used primarily for measuring loneliness among college students (Russell, Peplau and Cutrona, 1980). The present study has shown that it is also a valid measure of loneliness for younger adolescents. The individual item to item total UCLA scale correlations for Grade 8 subjects ranged from .33 to .75, with a median of 62.5. This is consistent with the item to total UCLA scale correlations for the University age group, which ranged from .48 to .75, with a median of 62.5.

Results of the analysis of variance computed for the UCLA Revised Loneliness scale indicated that there were no significant differences in the amount of loneliness reported either by the three age groups ($F(2,227) = 1.50$, $p < .318$) or by males and females ($F(1,277) = .109$, $p < .742$).

Self Esteem Measure

The self-esteem measure was a particularly strong predictor of loneliness for the youngest age group, with $r(78) = .64$, $p < .001$, $z = 2.64$, $p < .01$. It was not as strong a predictor of loneliness for University subjects (4 (16)) = .37, $p < .001$). As predicted, these results indicate that subjects low in self-esteem were also more lonely (as measured by the UCLA Loneliness scale.)

Self-consciousness Measure

The total measure of self-consciousness for the three age groups combined, showed a moderate correlation with the UCLA Scale (r (314) = .24 $p < 0.1$. Of the three sub-scales, only the measure of social anxiety was significantly correlated to loneliness, for the three age groups studies, with r (329) = .28, $p < .001$. As might be expected, subjects who indicated more social anxiety, were also more lonely.

Identity Measure

A sub-scale of the questionnaire was designed to measure the level of Identity Achievement vs Identity diffusion. Results of analysis of variance for this measure found no significant differences either for level or gender main effects (F (2,349) = 1.44, $p < .24$, and F (1,349) = .171, $p < .68$) or for the Interaction effects (F (2,349) = 2.49, $p < .08$). Correlational analysis provided evidence that the level of identity achievement was a strong predictor of loneliness, for all age groups (r (317) = .50, $p < .001$), with lonely subjects indicating a greater sense of Identity diffusion. This was again as predicted.

Relationship with Family

A group of five questions formed a measure of the relationship with one's family. Results of the analysis of variance indicated that there were significant differences between age groups for this measure (F (2,337) = 3.94, $p < .02$). Cell means were: 9.01 for Grade 8, 9.89 for Grade 11, and 8.74 for University students, where higher numbers indicate a less favorable relationship. Comparison of means revealed that Grade 11 students had a worse relationship with their family than did University students. Other comparisons were not significantly different. There was a trend for relationship with family to decline from Grade 8 to Grade 11, and then improve for University students.

This measure of the relationship with family, was a strong predictor of loneliness for all age groups. (r (327) = .41, $p < .001$). Those individuals who were more lonely (according to the UCLA scale) also indicated that they did not get along well with their family, or had little to say to members of their family.

Relationship with Parents

Four questions dealt with the subjects' relationship with their mother and father individually. Correlational analysis indicated that subjects who did not have a good or supportive relationship with their mother or father were also more lonely. The quality of the relationship with the mother, and whether or not the mother could be relied on for help, were both strong predictors of loneliness, particularily for the Grade 8 group, with r (93) = .49, $p < .001$, and r (92) = .48, $p < .001$, respectively. Results of the z-tests indicated that the magnitude of the correlation was significantly greater

for Grade 8 students than for University students for both predictors (z = 2.46, p <.05, and z = 2.23, p < .05). For university students, quality of the relationship with the mother, and whether the mother could be relied on for support, were not as important predictors of loneliness (4 (171) = .21, p < .005, and r (171) = .23, p < .002).

Correlations computed for the quality of the relationship with the father, and whether the father could be relied on for help, did not differ significantly in strength among the three age groups. The correlations for the total sample for these factors were: r (339) = .24, p < .001, (for quality of relationship with the father) and r (333) = .26, p < .001 (for whether the father was supportive).

As can be seen in Table 2, for Grade 11 subjects, only the quality of the relationship with the mother was a significant predictor of loneliness.

Parental Divorce or Separation

The questionnaire considered the relationship between loneliness and whether the subjects' parents had been divorced or separated. Results of statistical analysis indicated that subjects whose parents had been divorced or separated were significantly more lonely than subjects whose parents had not been divorced (t(343) = 2.30, p < .05). Means on the UCLA Loneliness scale were: 20.22 for children of divorced parents and 18.56 for children of non-divorced parents.

Correlational analysis showed no significant relationship between loneliness and subjects' age at the time of the divorce (r (53) = -.10, p < .47) or between loneliness and length of time in a single parent household (r(56) = -.16, p < .24).

TABLE 2

CORRELATIONS BETWEEN LONELINESS AND RELATIONSHIP WITH PARENTS FOR GRADE 8, GRADE 11 AND UNIVERSITY STUDENTS

Variable	Total Sample		Grade 8		Grade 11		University	
	df	r	df	r	df	r	df	r
Relationship with mother	341	.30**	93	.49**	66	.29*	171	.21*
Mother's Support	338	.31**	92	.48**	64	.22	171	.23*
Relationship with Father	339	.24**	93	.40**	65	.16	170	.21*
Father's Support	333	.26**	92	.27	62	.19	168	.26**

* $p < .05$

** $p < .001$

Mobility and Social Disruptions

Few of the mobility variables studied indicated significant relationships with loneliness. The number of years subjects had attended their present school showed a moderate inverse relationship with loneliness, for Grade 11 students, with r (65) = -.33, $p < .007$. Subjects who were at a school longer were less lonely. For University students, there was a small inverse relationship between loneliness and the length of time the subjects had lived in Winnipeg. (r (170) = -.16, $p < .04$).

Recent decrease in frequency of contact with friends was a significant predictor of loneliness for both Grade 8 students (r (87) = .24, $p < .022$) and Grade 11 students (r (65) = .34, $p < .005$). Recent decrease in the frequency of contact with friends was not significantly associated with loneliness, for University students. Table 3 presents the mobility data in detail.

Interpersonal Deficits

Number of friends. Several aspects of social contact were examined. Results of analysis of variance indicated that there were significant differences in the mean number of friends among the three age groups (F (2,316) = 3.66, $p < .03$). However, there were no significant differences for the gender main effect, or for the interaction effect. The means for the three groups were: 9.54, 9.88 and 8.23 (for Grade 8, Grade 11 and University Students, respectively). Post hoc comparisons indicated that the University group had significantly fewer friends than the other two groups combined. This analysis used an adjusted frequency count, where relatives were not included as friends.

Analysis of variance which included relatives among the number of friends, found a similar difference between age groups (F)2,314) = 4.61, $p < .011$).

TABLE 3

SOCIAL DISRUPTIONS AND THEIR RELATIONSHIP TO LONELINESS

Variables	Total Sample		Grade 8		Grade 11		University	
	df	r	df	r	df	r	df	r
Decrease in Frequency of Contact with Friends	327	.16**	87	.24*	65	.34**	165	.07
Years in School	338	-.10	90	-.15	65	-.33**	172	.03
Years in Winnipeg	338	-.15**	93	-.15	64	-.21	170	-.16*
Frequency of Change in Neighborhood	337	.12*	92	.17	64	.11	170	.19

* $p < .05$

** $p < .01$

Means for the three groups were: 10.98 for Grade 8, 10.58 for Grade 11, and 8.81 for University students. Comparison of means indicated that the University group differed significantly from both the Grade 8 and Grade 11 groups. University students had fewer friends than either group. By comparing the two friendship measures one can see that Grade 8 and Grade 11 students included more relatives among their number of friends than did University students.

Results of the correlational analysis (which included relatives among the number of friends) showed that the number of friends was inversely related to the level of loneliness. Subjects who had fewer friends were more lonely (r (329) = -.25 $p < .001$). This factor was a significant predictor of loneliness for Grade 8 students (r (89) = .24, $p < .05$) and for University students (r (167) = -.32 $p < .001$) but nor for Grade 11 students (r (63) = -.14, $p < .26$). The results of z-tests indicated no significant differences in the magnitude of the correlations for Grade 8 and University students (but only for Grade 11 and University students, $z = 2.15$, $p < .05$).

Total frequency of contact. Results of analysis of variance for this measure indicated significant differences among the age groups, for the total frequency of contact with friends (F (2,385) = 29.00 $p < .001$). The means for this measure were: 77.97, 81.21, and 93.53, for Grade 8, Grade 11 and University students, respectively, with lower numbers reflecting greater contact. Post hoc comparisons of means showed that Grade 8 and 11 students did not differ significantly in the frequency of contact with friends. However, there were very significant differences between Grade 8 and University students and Grade 11 and University students. University students had the least frequent contact with their good friends.

Correlational analysis revealed a moderate association between the

loneliness measure and the total frequency of contact with friends, with r (343) = .28, p < .001, for the sample as a whole. Subjects who had less frequent contact with friends were also more lonely. Results of z-tests found no significance between group differences in the magnitude of correlations, although inspection indicates the correlation was strongest among university students. Total frequency of contact with friends was a significant predictor of loneliness for Grade 11 students (r (66) = .26, p < .03) and for university students (r (175) = .39, p < .001), but not for Grade 8 students (r (93) = .19, p < .07). Table 4 presents the correlations between loneliness and both Total Frequency and Average frequency of contact.

Average frequency of contact. An average frequency of contact measure was also computed. Analysis of variance found highly significant between group differences for this variable (F (2,314) = 33.81, p < .001). Gender and interaction effects were not significant. Means for the three groups were: 2.20 for Grade 8, 2.28 for Grade 11, and 2.98 for University students, (with higher numbers reflecting lower average contact). Comparison of means found no significant difference between Grade 8 and Grade 11 in terms of the average frequency of contact with friends. However, University students were found to have significantly lower average frequency of contact with friends than either Grade 8 or Grade 11 students.

Correlational analysis indicated that average frequency of contact with friends was a significant predictor of loneliness in the sample as a whole, r (343) = .14, p < .01. For Grade 11 subjects (r (66) = .25, p < .04) and for University subjects (r (173) = .17, p < .02), this relationship held. However, it was not a significant predictor for Grade 8 subjects (r (93) = .02, p < .84). These results indicate that subjects who had lower average contact with friends

TABLE 4

RELATIONSHIP BETWEEN FREQUENCY OF CONTACT AND LONELINESS

Variable	Total Sample		Grade 8		Grade 11		University	
	df	r	df	r	df	r	df	r
Total Frequency of Contact	343	.28**	93	.19	66	.26*	173	.39**
Average Frequency of Contact	343	.14*	93	.02	66	.25*	173	.17*

* $p < .05$

** $p < .001$

were more lonely.

Social Participation. An overall social participation measure was computed for frequency of participation in organized activities (school, cultural, religious, athletic). Analysis of variance for the measure revealed highly significant between group differences (F (2,337) = 28.04, p < .001). Means for the three groups were: 8.11 for Grade 8, 9.20 for Grade 11, and 10.45 for University students, with higher number reflecting less frequent participation. Comparison of means showed very significant differences between each of the groups. Participation in organized activities decreased with age, so that university students participated less frequently than either Grade 8 or Grade 11 students.

Calculation of correlation coefficients indicated that frequency of social participation was a good predictor of loneliness for all age groups, with r (341) = .28, p < .001, for the sample as a whole.

Dating status. Several questions dealt with subjects dating status, frequency of dating and satisfaction with dating relationships. Analysis of variance computed for the frequency of dating measure, found significant between group differences (F (2,363) = 5.93, p < .003). Means were: 2.11, 2.30, and 2.63 for Grade 8, Grade 11 and University students, respectively. As might be expected, University students were dating more frequently than younger adolescents. Comparison of means indicated a significant difference between University students and Grade 8 students.

Correlation coefficients computed for the dating measures indicated that whether a subject was dating at all, (causally or steadily) was a significant predictor of loneliness only for university students (r (172) = -.15, p < .04.

Subjects who were not dating at all, were more lonely. Satisfaction with current dating relationship was also a significant predictor for university students (r (128) = .26, p < .003, with those subjects who were least satisfied, being most lonely. For the younger age groups, satisfaction with dating relationship was not a significant predictor of loneliness.

The results of correlational analysis found several important predictors of loneliness. These are presented in Table 5.

Time Alone. The amount of time spent alone on week-ends was a predictor of loneliness for all age groups (r (342) = .28, p < .001).

Type of contact. The amount of contact with good friends as opposed to contacts with strangers was also a predictor of loneliness for all age levels (r (341) = .28, p < .001. More contact with strangers, as opposed to good friends, was associated with more loneliness.

Comparison of number of friends. The subjects' assessment of how many good friends they had compared to their peers, was a strong predictor of loneliness for the sample as a whole (r (341) = .42, p < .001). Subjects who reported having fewer friends compared to their peers, were found to be more lonely.

Satisfaction with friends. Results indicate that satisfaction with the quality of relations with good friends was a strong predictor of loneliness for all three age levels studies (r (343) = .45, p < .001). Less satisfaction with friendship relations, was associated with greater loneliness.

Friendship Relations

Five friendship dimensions were examined in terms of both expected and

TABLE 5

SELECTED CORRELATES OF LONELINESS

	Sample							
	Total Sample		Grade 8		Grade 11		University	
Predictor	df	r	df	r	df	r	df	r
Social Participation	341	.28**	93	.30*	66	.33*	172	.23*
Satisfaction with dating relationships	222	.26**	53	.22	31	.26	128	.26*
Time Alone on Week-end	342	.28**	93	.20	66	.38**	173	.26**
Type of Contact	341	.28**	92	.30*	65	. 36*	173	.31**
Social Comparison	341	.42**	93	.41**	65	.38*	172	.46**
Satisfaction with Friends	343	.45**	93	.49**	66	.35*	173	.46**

* $p < .01$

** $p < .001$

achieved friendship qualities, as well as for the discrepancy between the expected and achieved qualities. Analysis of variance was computed for the three measures. None of the discrepancy measures, for the three separate age levels, or for the total sample, were significant.

The results of analysis of variance computed for the individual friendship dimensions, for each of these measures are presented in Table 6.

Significant differences in expectations between age groups were found only for the Help or Support aspect of friendship (F (2,361) = 7.47, $p < .001$). The means were: 9.80, 9.97 and 10.86 for Grade 8, Grade 11, and University students respectively. Comparison of means revealed that University students expected more help and support from their friends than did either Grade 8 students or Grade 11 students. No significant difference was found between Grade 8 and Grade 11 students with respect to their expectations of help and support from friends.

In terms of the achievement of particular friendship qualities, significant differences among age groups were found for both the experience of Help and Support (F (2,361) = 12.93, $p < .001$) and Positive Regard (F (2,360) = 4.18, $p < .016$. Comparison of means for the Help achieved dimension indicated that University students received significantly more help from their friends than did Grade 8 students and Grade 11 students. The difference between the two younger groups was not statistically significant. (The means were: 8.66, 9.44 and 10.30 for Grade 8, Grade 11 and University Students respectively).

Means for the Positive Regard Achieved dimensions were: 9.22 for Grade 8, 9.91 for Grade 11, and 9.86 for University students. Although the conservative procedure used for pairwise comparison of means failed to detect significant differences, there does seem to be a trend for the experience of

TABLE 6

MAIN EFFECTS, F VALUES AND SIGNIFICANCE LEVELS FOR THE EXPECTED, ACHIEVED AND DISCREPANCY MEASURES OF FIVE FRIENDSHIP DIMENSIONS

Friendship Dimension	Expected		Achieved		Discrepancy	
	F	p	F	p	F	p
Positive Regard						
Age Level	.75	.47	4.18	.02	2.65	.07
Gender	2.84	.09	6.96	.009	.54	.46
Interaction	1.88	.15	1.73	.18	.201	.82
Authenticity						
Age Level	2.78	.06	1.88	.15	1.32	.27
Gender	17.64	.001	4.91	.03	2.44	.12
Interaction	1.87	.15	7.22	.001	2.91	.06
Help						
Age Level	7.47	.001	12.93	.001	1.74	.17
Gender	10.17	.002	9.16	.003	.024	.88
Interaction	2.018	.13	2.17	.12	.07	.93
Self disclosure						
Age Level	2.27	.10	.86	.43	2.15	.12
Gender	22.15	.001	29.95	.001	1.87	.17
Interaction	.14	.88	.97	.38	1.82	.16
Empathy						
Age Level	.79	.46	1.32	.27	.14	.88
Gender	30.97	.001	24.41	.001	.59	.44
Interaction	.30	.74	.15	.87	.92	.40

positive regard to increase with age, with a slight peak for Grade 11 students.

Results of analysis of variance provide evidence of several significant differences between males and females in terms of both expectation and achievement of friendship qualities. As can be seen in Table 6, significant gender differences in expectations were found in four friendship dimensions: Authenticity, Help, Self-disclosure and Empathy. Analysis of variance for the achievement of these qualities revealed significant differences between males and females for all five friendship dimensions.

These significant results provide evidence for the differential expectations of males and females for friendship qualities. Females expected more help and empathic understanding from their friends; they expected to be more authentic in their relationship and to reveal more of their feelings. Consistent differences between males and females were also evident in the actual experience of these qualities, with more females reporting that they had experienced these aspects of friendship behavior.

For these various analyses, only one interaction effect was significant. There was a significant two-way interaction between age level and gender for the Authenticity achieved friendship dimension.

Correlational analysis revealed that there were significant inverse relationships between loneliness and all of the friendship dimensions studied, for both the expected and achieved measures. However, none of the discrepancy scores were significantly correlated with loneliness. Subjects who reported that they seldom expected or experienced a particular friendship quality, were more lonely, but the discrepancy measure itself was not a significant predictor of loneliness. Table 7 presents the correlation of loneliness for the expected and achieved qualities, as well as for the discrepancy measure.

TABLE 7

CORRELATIONS BETWEEN LONELINESS AND THE EXPECTED, ACHIEVED AND DISCREPANCY MEASURES OF FIVE FRIENDSHIP DIMENSIONS FOR THE TOTAL SAMPLE

Friendship Dimension	df	r
Positve Regard		
Expected	329	-.19
Achieved	330	-.28
Discrepancy	325	-.08 ($p < .16$)
Authenticity		
Expected	333	-.19
Achieved	336	-.27
Discrepancy	332	-.10 ($p < .06$)
Help and Support		
Expected	333	-.23
Achieved	333	-.30
Discrepancy	329	-.07 ($p < .20$)
Self-Disclosure		
Expected	336	-.29
Achieved	335	-.24
Discrepancy	332	.04 ($p < .48$)
Empathy		
Expected	339	-.23
Achieved	336	-.30
Discrepancy	334	-.06 ($p < .28$)

Note: $p < .001$, unless otherwise stated.

Discussion

Previous research had led to the formulation of several hypotheses concerning the antecedents of loneliness, some of which were confirmed by the data. These hypotheses will be reviewed briefly, before discussing some of the implications of the results.

Low self-esteem was found to be a very strong predictor of loneliness, particularly for younger adolescents. These findings corroborate reports by other researchers (Rosenberg, 1965, Wood and Hannell, 1977, Brennan and Auslander, 1979, Shaver and Rubinstein, 1979).

An aspect of self-consciousness which measured social anxiety, was found to be a significant predictor of loneliness. As well, the level of identity achievement was a particularly strong predictor of loneliness for all age levels.

Several aspects of inter-personal deficit were consistently strong predictors of loneliness for all age groups. These included: the frequency of social participation, the amount of time spent alone, the type of social contact (whether with friends or strangers), the number of friends compared to peers, and satisfaction with friendship relations.

Fluctuations in the determinants

The results also provided evidence that some of the determinants of loneliness change with age. While the quality of the relationship with family was a strong predictor of loneliness for all age groups, the quality of the relationship with the mother, and whether or not the mother was supportive, were especially stong predictors of loneliness for younger adolescents, more than for university students. This seems to indicate the greater importance of the mother as an attachment figure for younger adolescents.

Other relationships seem to become more important for older adolescents. For both Grade 11 and University students, the frequency of contact with friends was a significant predictor of loneliness, whereas this factor was not a significant predictor for Grade 8 students.

Although many aspects of social contact decreased with age, there was a significant increase in the frequency of dating for older adolescents. In addition, there was a corresponding increase in the qualitative aspects of friendship, with University students expecting and achieving more help from their friends than did Grade 8 and Grade 11 students. Older adolescents also experienced more positive regard in friendship relations.

In conclusion, the results show that although the amount of loneliness did not change, some of the determinants of loneliness changed for the three age groups. The shifting needs for different types of attachments and relationships during adolescence, may explain the apparent consistency in the amount of loneliness. Thus, for younger adolescents, the relationship with the mother was an important determinant,whereas for older subjects, romantic attachments, friendships, and some qualitative aspects of friendship relations were more important predictors of loneliness.

Mobility and Social Disruptions

The data only partially support the prediction that loneliness would be associated with mobility and social disruptions. Some evidence was found for age differences related to these factors. Since samples were drawn from generally stable populations, this may explain why mobility was not a major predictor of loneliness.

Parental Divorce or Separation

Results supported the hypothesis that adolescents whose parents had been divorced or separated would be more lonely than those whose parents had not been divorced, as reported by other researchers (Rubinstein, Shaver and Peplau, 1979; Shaver and Rubinstein, 1979). However results did not confirm the prediction of an inverse relationship between loneliness and age of the subject at the time of the parental divorce. Differences in the measurement instruments used, may have influenced the outcome. The UCLA scale does not specifically refer to loneliness as such, and loneliness was not an explicit issue in this questionnaire. The Shaver and Rubinstein questionnaire measured loneliness in terms of Frequency and Intensity, and questions were overtly directed to the experience of loneliness and associated feelings.

Friendship Relations

It was hypothesized that expectations for friendship qualities would change with age, and that the discrepancy between expected and achieved friendship behavior would be related to loneliness. However, evidence for differential expectations was provided in only one of five friendship dimensions studied, with university students expecting more help and support from their friends than did either of the two younger groups. In terms of the actual experience of particular qualities, again older students received more Help and Positive Regard from their friends.

These results only minimally support a cognitive developmental explanation of friendship. Instead of age related changes in expectation

and experience, it was found that gender was more significantly related to differences in expectation and achievement of friendship behavior. Females expected and achieved more than males. Gender differences in expectations and needs for certain friendship qualities have been reported extensively in the psychological literature (eg. Dickens and Perlman, 1980). Mid-adolescent girls need close, intimate same-sex friendships that provide emotional support and security, whereas for mid-adolescent boys, peer group support against authority is more important than intimacy and emotional support. Older adolescent girls expect emotional commitment from both same sex and heterosexual relationships. The different needs are reflected in the results, with higher scores for girls on all friendship dimensions, most notably for self-disclosure and empathy.

There may be a social developmental explanation for the failure to find significant age differences in expectation and experience of most friendship qualities. Since social learning influences expectations, there may in fact be a decrease in expectations with age. Older adolescents may learn to expect less from friendship relations, if earlier expectations have not been met. They may become cynical because of past experience.

Another possible explanation for the unexpected results may be the use of the term 'good friend'. Probably, a more precise distinction should be made between 'good friend' and 'close friend'. The peer group in general may all be considered 'good' friends, but the friendship qualities described by the measures in this study apply only to 'best' or 'close' friends. Relationships with 'close' friends as opposed to 'good' friends could be qualitatively different. Perhaps re-examination of these friendship qualities with more precise definitions of friends would produce different results.

Discrepancy Measure

The discrepancy measures computed for the difference between expected and achieved friendship qualities did not prove to be significant. This unexpected finding may have been due to the measure itself. Social desirability may have influenced subjects responses. There was evidence of response bias, with little or no range between the responses on the seven point scales used.

Implications for Theory

While the discrepancy measure itself was not significant, other results did indicate that a discrepancy between desired and achieved levels of social interaction was related to loneliness. Several correlates of loneliness involved an implicit discrepancy. Subjects who were less satisfied with family, friendship and dating relationships were more lonely. These all suggest a disjunction between desired and achieved levels of social contact.

Correlational analysis revealed that loneliness was associated both with expected and achieved friendship qualities, suggesting that some discrepancy was occurring.

These results provide some support for the definition of loneliness as a social deficiency (Peplau and Perlman, 1979).

Implications for Social Policy

There are several implications for the lonely adolescent, parents and teachers. Identifying some of the antecedents of loneliness may be of

value in helping to recognize and rectify specific personal, social and situational deficiencies. Social scientists have suggested that inadequate social interactions established in childhood may set the pattern for chronic loneliness. Increased awareness of these determinants could guide parents, teachers and other professionals in their efforts to prevent loneliness and the serious social problems associated with isolated and alienated adolescents.

This study identified several personal factors related to loneliness. Since social anxiety was an important predictor of loneliness, the development of social skills would be a direct way of building confidence to cope with social interactions. Acquiring better social skills would also enhance self esteem, which is associated with loneliness. For instance, a program which implemented structured inter-dependent learning in the classroom, was found to encourage cooperation and improve self-esteem among the participating students (Arnonson and Bridgeman, 1980). This jigsaw method, in which each student in a small group contributed a vital part of information to a learning situation, was effective in increasing interpersonal attraction, even when used for short periods of time.

Identity diffusion was another personal factor associated with loneliness. Parents and teachers who are aware that identity is a major concern for adolescents, can guide them towards identity achievement and alleviate a potential problem.

Parental divorce was one of the situational factors found to have an important relationship to loneliness. Since children of divorced parents are more lonely, awareness of the association can direct parents, teachers and others to providing the emotional support the lonely adolescent needs.

Mobility was not an important predictor in this data set because Winnipeg is a stable community. However, in other places mobility may be implicated as a determinant of loneliness. In such situations, the adolescent requires a support system to encourage and help him over the difficult period.

Despite the emphasis on prevention of chronic problems, loneliness in adolescence does not necessarily indicate a long term condition. Although the potential for loneliness increases during adolescence, the experience of loneliness may be part of the developmental process and only transitory in nature.

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